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10/033,080	12/26/2001	Gerald L. Ehlers	064749.0139	8497

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BAKER BOTTS L.L.P.
2001 ROSS AVENUE
SUITE 600
DALLAS, TX 75201-2980

EXAMINER	
ALSOMIRI, ISAM A	
ART UNIT	PAPER NUMBER
3662	

DATE MAILED: 04/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/033,080	Applicant(s) EHLERS ET AL.	
	Examiner Isam A Alsomiri	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 5-32 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 5-16,18-25,27-29 and 31-33 is/are rejected.

7)☒ Claim(s) 17,26 and 30 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12, 14-15, 18, and 22-23 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 15, 18, 22 and 23, it is unclear how a one diode can generate an harmonic intermodulation output in response to two RF signals, and comprises a signature identification of the article. For examination purpose, more than one diode will be considered for the "at least one RF diode" to comprise a signature identification of the article.

Regarding claims 12, 14, 22, and 23, it is unclear how the at least one RF diode generate a harmonic intermodulation output in accordance the expression (2F1 – F2 in claims 12 and 22) or (2F2- F1 in claims 14 and 23), it is unclear how a one diode will radiate (2F1-F2 or 2F2-F1) in response to F1 and F2 signals by it self.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-7, 9-11, 13, 15-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mawhinney in view of Nysen. Referring to claim 5, Mawhinney discloses in figures 1-4 at least one semiconductor device carried by an article and responsive to at least two RF signals to generate an harmonic intermodulation output (see Abstract, col. 1 lines 10-19 & 49- 58), an antenna 24 receiving an harmonic intermodulation output. Mawhinney does not teach using a signal analyzer coupled to the antenna and responsive to the analyzer signal, Nysen teaches using an analyzer for reconstructing the symbols form the detected modulation pattern (see col. 10 lines 52-56), which reads on the claimed a signal analyzer coupled to the antenna and responsive to the analyzer signal to identify the article carrying the at least one semiconductor device. It would have been obvious to include in Mawhinney's system a signal analyzer coupled to the antenna to obtain and extract the signal more accurately for further processing.

Referring to claim 6, Mawhinney teaches at least one RF diode (see col. 1 lines 10-19 and 49-58).

Referring to claim 7, Mawhinney teaches "by way of example" f1 may range from 9.5 to 10 GHz and f2 my range from 12.0 to 12.5 (see col. 2 lines 22-26), therefore, the choice of a frequency range is arbitrary, which reads on the claimed "responds to RF signals in a frequency range from about 24.0 GHz to about 24.1 GHz".

Referring to claim 9, Mawhinney teaches a tag that comprises at least one semiconductor device comprises a signature identification of the article carrying the semiconductor device (see col. 3 lines 16-27).

Referring to claim 10, Mawhinney discloses in figures 1-4 a first signal generator 12 to generate an RF signal at a first frequency, a second signal generator 14 to generate an RF signal at a second frequency, at least one RF diode carried by an article and responsive to at least two RF signals to generate an harmonic intermodulation output (see Abstract, col. 1 lines 10-19 & 49- 58), an antenna 24 receiving an harmonic intermodulation output. Mawhinney does not teach using a signal analyzer coupled to the antenna and responsive to the analyzer signal, Nysen teaches using an analyzer for reconstructing the symbols form the detected modulation pattern (see col. 10 lines 52-56), which reads on the claimed a signal analyzer coupled to the antenna and responsive to the analyzer signal to identify the article carrying the at least one RF diode. It would have been obvious to include in Mawhinney's system a signal analyzer coupled to the antenna to obtain and extract the signal more accurately for further analyses.

Referring to claims 11 and 13, Mawhinney discloses in figures 1-4 antenna 24 receives the signal by subtraction of the first frequency signal from the second frequency signal (see col. 1 lines 49-58). Furthermore, it is obvious to use different mixers diodes that subtract a second

frequency signal from the first frequency signal, or vice versa, subtraction of a first frequency from the second frequency signal.

Referring to claim 15, Mawhinney teaches a tag that comprises at least one diode comprises a signature identification of the article carrying the diode (see col. 3 lines 16-27).

Referring to claim 16, Mawhinney teaches "by way of example" f1 may range from 9.5 to 10 GHz and f2 my range from 12.0 to 12.5 (see col. 2 lines 22-26), therefore, the choice of a frequency range is arbitrary, which reads on the claimed "responds to RF signals in a frequency range from about 24.0 GHz to about 24.1 GHz".

Referring to claim 18, Mawhinney discloses in figures 1-4 generating at least two RF signals f1 and f2 at separate frequencies, generating an harmonic intermodulation signal by at least one RF diode carried by an article and responsive to the at least two RF signals (see Abstract, col. 1 lines 10-19 & 49-68), generating a signal from antenna 24 receiving the third harmonic intermodulation output, generating an article unique identification or an identification signature by the signal from antenna 24 (col. 3 lines 16-27). Mawhinney does not teach generating an analyzer signal from an antenna, and analyzing the analyzer signal to generate an article identification signature, Nysen teaches an analyzer for reconstructing the symbols from the detected modulation pattern, which inherently requires an analyzer signal, which reads on the claimed generating an analyzer signal from an antenna, and analyzing the analyzer signal to generate an article identification signature (see col. 10 lines 52- 56). It would have been obvious

to include in Mawhinney's system a signal analyzer coupled to the antenna to obtain and extract the signal or the article identification signature more accurately for further analyses.

Claims 19-21, 24-25, 28-29, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mawhinney in view of Nysen and Dames et al. Referring to claims 19-21, Mawhinney does not teach storing the article signature for subsequent identification of the article, Dames teaches providing a data storage and retrieval system, and comparing the characteristics with known stored information in a data bank relating to items on an inventory to identify that item (see col. 2 lines 30-33 and 46- 51), which reads on the claimed storing the article signature for subsequent identification of the article, scanning the stored article signatures for identification of an article, and generating an article identification in response to scanning the stored article signature. It would have been obvious to modify Mawhinney's system to include storing article signatures and scan the stored signatures to identify the articles carrying a tag and to obtain more reliable tag detection and an accurate item identification system.

Referring to claim 24, Mawhinney discloses in figures 1-4 identification system for articles carrying a diode generating an harmonic intermodulation output (see Abstract, col. 1 lines 10-19 & 49-68). Mawhinney does not teach a spectrum analyzer responsive to an harmonic intermodulation output, the spectrum analyzer generating an identification signal, Nysen teaches an analyzer for reconstructing the symbols from the detected modulation pattern, and an output

for producing information corresponding to said sequence of symbols (see col. 10 lines 52-56), which reads on the claimed a spectrum analyzer responsive to an harmonic intermodulation output, the spectrum analyzer generating an identification signal. It would have been to include the spectrum analyzer to extract the signal and obtain the article identification signature more accurately for further analyses. Mawhinney does not teach a signature memory storing the identification signatures of at least one article for identification, and a comparator responsive to the identification signal, the comparator generating an output identifying an article carrying at least one semiconductor device from the stored identification signatures, Dames teaches a data storage or a data bank for storing tag characteristics, which reads on the claimed a signature memory storing the identification signatures of at least one article for identification (see col. 2 lines 30-34 & 1-46), Dames teaches a comparator to compare the detected characteristics with information in the data bank to identify the article carrying the tag, which reads on the claimed a comparator responsive to the identification signal, the comparator generating an output identifying an article from the stored identification signatures (see col. 2 lines 46- 65). It would have been obvious to modify Mawhinney's system to further include the signature memory and the comparator to identify the articles carrying a tag, and obtain a more reliable tag detection system and an accurate item identification system.

Referring to claim 28, Mawhinney discloses in figures 1-4 a first signal generator 12 to generate an RF signal at a first frequency, a second signal generator 14 to generate an RF signal at a second frequency, at least a diode mixer carried by an article and responsive to at least two RF signals to generate an harmonic intermodulation output (see Abstract, col. 1 lines 10-19 & 49- 58), an antenna 24 receiving an harmonic intermodulation output.

Referring to claims 25 and 29, Mawhinney discloses in figures 1-4 generating a signal from an antenna 24 receiving the harmonic intermodulation output by diode mixer, which reads on the claimed at least one semiconductor device carried by an article (see col. 1 lines 10-19 & 49-58), generating an article unique identification or an identification signature by the signal from the antenna 24 (col. 3 lines 16-27). Mawhinney does not teach generating an analyzer signal, the analyzer responsive to the analyzer signal to generate an article identification signature, Nysen teaches an analyzer for reconstructing the symbols from the detected modulation pattern, which inherently requires an analyzer signal, which reads on the claimed generating an analyzer signal from an antenna, and analyzing the analyzer signal to generate an article identification signature (see col. 10 lines 52- 56). It would have been obvious to include in Mawhinney's system a signal analyzer coupled to the antenna to obtain and extract the signal or the article signature more accurately for further analyses.

Referring to claim 31, Mawhinney discloses in figures 1-4 generating at least two RF signals f1 and f2 at separate frequencies, generating an harmonic intermodulation signal by a diode carried by an article and responsive to the at least two RF signals (see Abstract, col. 1 lines 10-19 & 49-68), generating a signal from an antenna 24 receiving the harmonic intermodulation output, generating an article unique identification or an identification signature by the signal from the antenna 24 (col. 3 lines 16-27). Mawhinney does not teach generating an analyzer signal from an antenna, and analyzing the analyzer signal to generate an article identification signature, Nysen teaches an analyzer for reconstructing the symbols from the detected modulation pattern, which inherently requires an analyzer signal, which reads on the claimed generating an analyzer signal from an antenna receiving the harmonic intermodulation output

(see col. 10 lines 52- 56). It would have been obvious to include in Mawhinney's system a signal analyzer coupled to the antenna to obtain and extract the signal or the article identification signature more accurately for further analyses. Mawhinney does not teach comparing the analyzer signal with stored identification signature to identify the article carrying the at least one semiconductor, Dames teaches a data storage or a data bank for storing tag characteristics, which reads on the claimed one or more stored identification signatures (see col. 2 lines 30-34 & 1-46), a comparator to compare the detected characteristics with information in the data bank to identify the article carrying the tag, which reads on the claimed comparing the analyzer signal with stored identification signature to identify the article (see col. 2 lines 46- 65). It would have been obvious to modify Mawhinney's system to include comparing the signal with stored article signatures to identify the articles carrying a tag, and obtain a more reliable tag detection system and an accurate item identification system.

Referring to claims 32 and 33, Mawhinney does not teach storing the identification signatures for subsequent comparison with signals, Dames teaches providing a data storage and retrieval system, and comparing the characteristics with known stored information in a data bank relating to items on an inventory to identify that item (see col. 2 lines 30-33 and 46- 51), which reads on the claimed storing the identification signatures for subsequent comparison with signals, and scanning the stored signatures and generating an article identification signal in response to a comparison between the stored signatures and the signal. It would have been obvious to modify Mawhinney's system to include storing article signatures and scan the stored signatures to identify the articles carrying a tag and to obtain more reliable tag detection and an accurate item identification system.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mawhinney in view of Nysen and Dames et al. as applied to claim 24 above, and further in view of Shimamura et al. The combination of Mawhinney, Nysen, and Dames does not teach a display responsive to the signal generated by the comparator to indicate identification of an article, Shimamura teaches display responsive to the signal generated by the comparator to indicate identification of an article (see col. 1 line 67 – col. 2 line 19). It would have been obvious to modify the combination of Mawhinney, Nysen, and Dames' system to further include a display to be able to identify the article carrying the tag easily.

Allowable Subject Matter

Claims 17, 26, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 22 and 23 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, set forth in this Office action.

Claims 3, 12, 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 12 December 2002 have been fully considered but they are not persuasive. Regarding claims 5-7, 9-11, 13, 15, 16 and 18, applicant argues that Mawhinney and Nysen fails to disclose or suggest the applicant invention, because "Nysen system is significantly more complex than Mawhinney and the analyzer as referred to in column 10 lines 52-56, reconstructs symbols from a detected modulation pattern as a part of an RF-ID tag reader and thus finds application with the system of Mawhinney" (response page 14). Just because the Nysen's system is more complex than Mawhinney's as the applicant believes does not make the combination improper, Nysen teaches a signal analyzer for the detection of a tag signal, a signal analyzer is known in the art, and generally it's being used to break down and (reconstructing) a signal to be detected and to extract the information from the signal after it has been broken down, and the combination of Nysen with Mawhinney is proper, because Mawhinney in view of Nysen can use the signal analyzer

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, regarding claims 19-21, 24, 25, 28, 29, and 31-33, regarding the combination of Mawhinney and Nysen (see response regarding claim 5), regarding combination of Mawhinney, Nysen, and Dames et al, applicant argues "where in Mawhinney is there any

suggestion, teaching or motivation to combine Mawhinney, Nysen, and Dames et al.?" (Response page 15 first paragraph), as mentioned above the motivation does not need to be in references themselves, it can be from the knowledge generally available to one of ordinary skill in the art.

Similarly regarding claim 24, applicant argues "There is no display suggested and there is no inherency in Mawhinney's to provide a display thus the rejection of claim 27 can only be based on a hindsight reconstruction using Applicants' description as a blueprint for piecing together the prior art" (response page 15 second paragraph), again if Mawhinney's system suggest a display or if it inherently include a display then there would not be a reason to look for any other reference, having display can be rejected on U.S.C 102. Applicant has not shown why the combination of Mawhinney and Shimamura et al. is improper.

Therefore, the rejections are maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isam A Alsomiri whose telephone number is 703-305-5702. The examiner can normally be reached on Monday-Thursday and every other Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H Tarcza can be reached on 703-306-4171. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Isam Alsomiri

April 21, 2003

THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600